



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/762,733	04/05/2001	Michael Benz	11270-166	8572

29177 7590 04/26/2004
BELL, BOYD & LLOYD, LLC
P. O. BOX 1135
CHICAGO, IL 60690-1135

EXAMINER

D AGOSTA, STEPHEN M

ART UNIT	PAPER NUMBER
----------	--------------

2683

10

DATE MAILED: 04/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/762,733

Applicant(s)

BENZ ET AL.

Examiner

Stephen M. D'Agosta

Art Unit

2683

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 11-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 April 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☒ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____. | 6) <input type="checkbox"/> Other: _____. |

DETAILED ACTION

The examiner acknowledges cancellation of claims 1-10 and addition of new claims 11-20.

Priority

Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). A reference to the original application is required on the first page of the specification for any 371 or continuation as "continuing data"

Drawings

The drawings were received on 4-5-01 and have been reviewed by the draftsperson and examiner.

Information Disclosure Statement

There are patents included with the file but the examiner was unable to find an IDS sheet to sign. Did the applicant file an IDS with this application? If yes, please retransmit the IDS sheet. Otherwise, please state that no IDS was sent.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 11, 13-14, 16, 18-20 rejected under 35 U.S.C. 102(b) as being anticipated by Yamada et al. US 5,483,666 (hereafter Yamada).

As per **claim 11 and 20**, Yamada teaches a method for determining operability of at least one radio channel in a mobile radio communication system (title), the method comprising the steps of:

Observing at least one radio channel as an observed radio channel (C2, L59-66)

Establishing an operating state of the observed radio channel at least one of continuously in time and repeatedly over a number of successive frames (C3, L1-10 and L20-33)

Evaluating a resultant history of the operating state to determine the operability of the observed radio channel (C3, L33-41).

As per **claim 13**, Yamada teaches claim 11 further comprising determining a measured value characteristic of the operating state of the observed radio channel during the step of establishing the operating state (C3, L1-33 teaches measuring RSSI).

As per **claim 14**, Yamada teaches claim 13 comprising determining whether the measured value has one of reached, exceeded or undershot a predetermined limit value in a period of observation during the step of evaluating the resultant history (C3, L25-30 and/or C3, L41-46).

Art Unit: 2683

As per **claim 16**, Yamada teaches claim 11 further comprising:

Establishing the respective operating state of a plurality of observed radio channels (C3, L19-22)

Determining a correlation of a development of the operating state of at least some of the observed radio channels with time during the step of evaluating the resultant history (C3, L25-30).

As per **claim 18**, Yamada teaches claim 11 comprising the steps of:

Establishing repeatedly a measure of the operating state

Storing a corresponding value in a data field of a data memory for storing a development of the operating state with time (C3, L1-46).

As per **claim 19**, Yamada teaches claim 11 wherein the channels are physical channels of a TDMA/FDMA system (C1, L5-10 teaches cellular mobile telephone system which is interpreted as TDMA/FDMA) and the operating state of each available radio channel is one of known and established by observing the at least one observed radio channel (C3, L1-46).

As per **claim 20**, Yamada teaches a transmission station (figures 1, 3 and 7) for determining operability of at least one radio channel in a mobile radio communication system (title), the method comprising the steps of:

Observing at least one radio channel as an observed radio channel (C2, L59-66)

Establishing an operating state of the observed radio channel at least one of continuously in time and repeatedly over a number of successive frames (C3, L1-10 and L20-33)

Evaluating a resultant history of the operating state to determine the operability of the observed radio channel (C3, L33-41).

Also note that Yamada teaches receiving device/station(s) (figure 1 shows Mobile, #4, BTS #3 and MTSO #2), storage device for storing history values (figure 3, #38) and an evaluation device (Cellular Scanner, #7 which measures RSSI and determines channel operability, C3, L20-33. The fixed station connected to the Control Unit, #5 also operates similarly, C5, L41 to C7, L30).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 12 and 15 rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada as applied to claim 11 and further in view of Wang et al. US 5,471,671 (hereafter Wang).

As per **claim 12**, Yamada teaches claim 11 **but is silent on** further comprising determining a mean value of the operating state over a period of observation during the step of evaluating the resultant history.

Wang teaches a successful event on a channel has occurred (i.e., a call on the channel is finished successfully), the success event counter, N.sub.s, for that channel is incremented by one and the Margin for that channel is updated. Previous proposals for using a channel with a measured Margin use an instantaneous value for the Margin which is only updated when needed, i.e., at the call setup stage. The method of the present invention, though, updates the Margin after each successful completion of a call, thereby utilizing a more meaningful Margin based on the history of the channel. The Margin being updated after each successful call realizes a mean Margin value which advantageously improves the concept of Margin over the prior instantaneous margin measurement. Also, the margin value after a successful call is a truer measurement of channel Margin than the margin measured at call connection setup (C7, L26-42).

It would have been obvious to one skilled in the art at the time of the invention to modify Yamada, such that a mean value is used, to provide for an average value to be

Art Unit: 2683

used which provides a more optimal (eg. smoother) value than an instantaneous number.

As per **claim 15**, Yamada teaches claim 13 **but is silent on** wherein wherein a short-time fluctuation of the measured value remains unconsidered in the step of evaluating the resultant history.

Wang teaches a successful event on a channel has occurred (i.e., a call on the channel is finished successfully), the success event counter, N.sub.s, for that channel is incremented by one and the Margin for that channel is updated. Previous proposals for using a channel with a measured Margin use an instantaneous value for the Margin which is only updated when needed, i.e., at the call setup stage. The method of the present invention, though, updates the Margin after each successful completion of a call, thereby utilizing a more meaningful Margin based on the history of the channel. The Margin being updated after each successful call realizes a mean Margin value which advantageously improves the concept of Margin over the prior instantaneous margin measurement. Also, the margin value after a successful call is a truer measurement of channel Margin than the margin measured at call connection setup (C7, L26-42).

The examiner notes that the use of a history (Yamada, C3, L33-41) and/or a mean/average value as taught by Wang would also lead one skilled in the art to NOT use short-term fluctuations since they will skew the data and hence should not be used.

It would have been obvious to one skilled in the art at the time of the invention to modify Yamada, such that short-term fluctuations are not used, to provide for using only longer-term data and not short-term fluctuations which can result in erroneous data being factored in (eg. if a rain storm occurs for an hour, that timeframe may have non-optimal RF communications and should not be considered).

Claims 17 rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada and further in view of Sehier et al. US 5,548,618 (hereafter Sehier).

As per **claim 17**, Yamada teaches claim 16 wherein radio channels are physical channels of a TDMA system (C1, L5-10 teaches cellular mobile telephone system which is interpreted as TDMA) is established from the correlation of the development of observed radio channels of a same radio frequency with time (C3, L1-46) **but is silent on** a temporal drift of a radio channel.

Sehier teaches in tracking mode, the energy detection applies to the first N samples in the search window. This search window is opened approximately halfway through the timing recovery word RR to allow for temporal drift (C8, L38-48).

The examiner also notes, but does not cite, Massetti who teaches the central office has a clock that is regularly re-synchronized with a national time standard 90. In the U.S., for example, the clock 88 may be synchronized by the time signal which is broadcast by NIST over radio station WWVB. A clock 92 in the local home unit computer 82 may be, as is also known in the art, re-synchronized by use of the clock 88 in the central office 84 during each data collection telephone call between the central office 84 and the local home unit computer 82. Although it is known, as taught by Waechter et al in U.S. Pat. No. 4,943,963, to synchronize other portions of the in-home television tuning measurement system 10, such as the timing devices 50, 54, 58, 66, and 70 of the corresponding local code inserters 44, 46, 48, 62, and 64, and timing devices in the decoders 76, 78, and 78, to the clock 92 in the local home unit computer 82, it may be preferable to allow one or more of these other portions of the in-home television tuning measurement system 10 to run freely (i.e., without regular re-synchronization) and to use one of the clocks 88 and 92, which are regularly re-set, to track whatever temporal drift may occur in each such free running other portions (C10, L17-37).

It would have been obvious to one skilled in the art at the time of the invention to modify Yamada, such that temporal drift is used, to provide means to measure/monitor temporal drift and incorporate it into the channel operability history.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

1. Zicker WO97/47147 teaches handset-selected channel assignments.
2. Ruppel et al. US 5,737,705 teaches frequency assignment.
3. Eswara et al. US 6,219,554 teaches dynamic frequency assignment.
4. Trompower US 6,215,982 teaches selection of channels.
5. Jackson et al. US 6,023,621 teaches dynamic reallocation of frequencies.
6. Greene Sr. et al. US 5,926,763 teaches channel usage biasing.
7. Yamagata et al. US 5,237,603 teaches monitors channels from all channels.
8. George US 5,203,015 teaches automatic channel selection.
9. Massetti US 5,850,240 teaches receiver monitoring.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen M. D'Agosta whose telephone number is 703-306-5426. The examiner can normally be reached on M-F, 8am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bill Trost can be reached on 703-308-5318. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-0377.

Stephen D'Agosta

